

REMARKS

Claims 1-4 are pending in the application. Claims 2 and 3 have been allowed.

35 U.S.C. § 103 Rejections

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 11-161760 to Fujikawa et al. (hereinafter "Fujikawa et al.").

In claim 1 of the present invention, as shown in Fig.1 of the application, a pair of sheet members 20 and 22 are fed on both surface sides of a mount substrate 12, which is continuously fed, in such a manner that the mount substrate 12 is interposed between the pair of sheet members 20 and 22. In the present invention, both surfaces of the mount substrate 12 have uneven component formation. Next, adhesives in fluid form 28 and 30 are respectively fed on surfaces 20A and 22A of sheet members 20 and 22 by adhesive supply means 32 and 35, which can be die coaters or T-dies. Next, the sheet members 20 and 22 are guided by a pair of guide rolls 24 and 26 in such a manner that the mount substrate 12 is interposed between the surfaces of the sheet members 20 and 22 on which the adhesives are fed. Thereafter, the distance between the pair of sheet members 20 and 22 is regulated, creating a constant spacing, and the adhesive is hardened. As a result, the unevenness of components such as IC chips, capacitors, and antenna coils, which are mounted or formed on the mount substrate 12, are absorbed by the adhesives in fluid condition, so that the exposure of the unevenness can be avoided. Therefore, a company name or other information can be printed on a card surface by using conventional printers without the need to employ special printers such as an ink jet printer. Further, no impact would be experienced by the

components, such as IC chips, when the IC cards are placed in a bag or the like. Thus, the components are protected, and the damage to the IC cards can be avoided.

Moreover, in the present invention, the presence of components such as IC chips in the IC cards cannot be recognized from the outside so the alteration of information stored in the IC cards can be prevented. Therefore, with adhesives 28 and 30, the unevenness of various parts, such as IC chips, can be absorbed and can be entirely sealed. Furthermore, the thickness of an integrated circuit card can be made as thin as possible.

The object of Fujikawa et al. is that the connection between the laminate and the electronic parts can be contained in one process, thereby shortening the production line. In Fujikawa et al., the electronic components 30 are carried in the conductive pattern 20 formed on one side of a film 10, and is temporarily fixed with liquid 40 as shown in Figures 8 and 9 of Fujikawa et al. Then, on film 10, on which the electronic parts 30 are fixed, the cover film 60 is applied with a paste, such as a hot melt, heated, pressurized, and laminated as shown in Figures 10 and 11 of Fujikawa et al.

In this instance, the connection terminal 32 of the electronic components 30 fixed on the conductive pattern 20 of a film 10 is simultaneously connected to the conductive pattern 20. Therefore, in Fujikawa et al., the film 10 that fixes the electronic products 30 to one side is equivalent to the mount substrate 12 in the present invention. Moreover, on the upper surface of the film 10 which fixed the electronic components 30, the cover film 60 with paste is heated, pressurized, and laminated. In Fujikawa et al., one sheet member 60 is supplied on a mounting board. On the other hand, the pair of sheet members 20 and 22 are supplied on both the surface side of the mounting substrate 12 in such a manner that the mount substrate 12 is sandwiched between

the pair of sheet members 20 and 22. Namely, in Fujikawwa et al., a film 10 functions as a mounting board while operating as a sheet member. Moreover, in Fujikawa et al., the mounting substrate would not be sandwiched and fixed between a pair of sheet members 20 and 22 as in the present invention. Therefore, it is apparent that in the case of an integrated circuit card produced by the method of Fujikawa et al., the unevenness of the electronic components 30 is exposed. Thus, the composition of the integrated circuit card to be processed would be different between Fujikawa et al. and the present invention. Moreover, the manufacturing method is also completely different between Fujikawa et al. and the present invention. The composition and the function/effects of the present invention is not disclosed or suggested in Fujikawa et al. Therefore, the present invention is not obvious over Fujikawa et al. and the rejection under 35 U.S.C. § 103(a) as being obvious over Fujikawa et al. should be withdrawn.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujikawa et al., further in view of JP 10-302040 to Toke (hereinafter "Toke").

In Toke, the mounting substrate 11 to be processed is a mounting substrate as shown in Figure 3. In this mounting substrate 11, the irregularity of the IC 12 and the aerial coil 15, etc. are absorbed and smoothed by feeding thermosetting resins 26 on the surface of the mounting substrate 11. Thereafter, a mold release sheet 27 is laminated on the smooth face of the mounting substrate 11.

Additionally, in Toke, the front sheathing sheet 32 and the rear sheathing sheet 33 is stuck on both faces of the mounting substrate 11 which has been smoothed previously as explained above, by using the process of producing a card as shown in Figure 4. Therefore, the process disclosed in Toke requires the process that is shown in Figure 3. Furthermore, in Toke, in order to

use the process shown in Figure 4, it is necessary to exfoliate the mold release sheet 27 from the mounting substrate 11, resulting in a complicated process. Moreover, in Toke, the front coating sheet 32 is supplied with the first conveyance roll 36 as shown in Figures 4 and 5. Then, the back coating sheet is supplied with the second conveyance roll 37, followed by the front coating sheet 32 and the back coating sheet 33 being stuck together using a pair of rollers 34a and 34a.

Moreover, the distance between the subsequent heating rolls 34 and 34 is the same as the distance between the lamination rolls 34a and 34a. Additionally, in Toke, the distance between sheet members 20 and 22 would not be narrowed gradually as in claim 4 of the present invention. Therefore, the present invention is different from Toke.

There is no disclosure in Toke that corrects the exposure of uneven electrical components in Fujikawa et al. as is discussed above. No combination of Fujikawa et al. and Toke discloses the present invention. Therefore, the present invention is not obvious over Fujikawa et al. in view of Toke, and the rejection under 35 U.S.C. § 103(a) as being unpatentable over the prior art should be withdrawn.

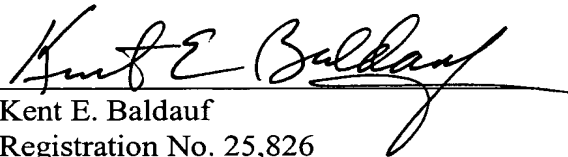
Appl. No. 09/830,490
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In view of the above amendments and remarks, it is believed that all of the pending claims are in condition for formal allowance. Reconsideration of the rejections of claims 1 and 4 and formal allowance of claims 1- 4 are respectfully requested.

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